

ABSTRACT

The present invention relates to a high-tensile-strength low alloy carbon steel (in the form of a steel sheet, a steel pipe, a section steel or a wire rod), for a building structure, said high-tensile-strength steel being excellent in high temperature strength during a relatively short span of about one hour in the temperature from 600°C to 800°C and being used in the field of building construction, civil engineering, an offshore structure, shipbuilding, a reservoir tank or the like; and, more specifically, is a high-tensile-strength steel excellent in high temperature strength, characterized by containing, in mass, C at not less than 0.005% to less than 0.08%, Si at not more than 0.5%, Mn at 0.1 to 1.6%, P at not more than 0.02%, S at not more than 0.01%, Mo at 0.1 to 1.5%, Nb at 0.03 to 0.3%, Ti at not more than 0.025%, B at 0.0005 to 0.003%, Al at not more than 0.06%, and N at not more than 0.006%, with the balance consisting of Fe and unavoidable impurities and satisfying the expression $p \geq -0.0029 \times T + 2.48$ when the steel temperature T (°C) is within the range from 600°C to 800°C, wherein p is a stress drop ratio (a yield stress at a high temperature/ a yield stress at room temperature) that is obtained by converting a yield stress normalized by using a yield stress at room temperature.